atac

Modular Scalable Turnkey
Wastewater Treatment Solutions

atacsolutions.com

Achilles UVDB SILVER PLUS

CHAS

NICEIC APPROVED CONTRACTOR

British Assessment Bureau UKAS MANAGEMENT SYSTEMS 8289 ISO 14001 ENVIRONMENTAL MANAGEMENT

British Assessment Bureau UKAS MANAGEMENT SYSTEMS 8289 ISO 9001 QUALITY MANAGEMENT

About ATAC

ATAC Solutions was founded in 2007 by Andrew Turnill and Adam Colley. The company name "ATAC" comes from the founders' initials, reflecting their partnership and shared vision. Starting with packaged plant solutions for military applications in Middle East, ATAC has evolved into a leading provider of modular, mobile, and rapid deployment wastewater treatment systems in the UK.

In 2021, ATAC was acquired by Axius Water Group, bringing additional resources and expertise to support our expansion and broaden customer base.

ATAC offers a full range of water treatment solutions, covering all key treatment stages with equipment is available via capital and hire schemes.

ATAC treatment systems include:

- Submerged Aerated Filters (SAF)
- Vertical SAF (vSAF)
- Moving Bed Biofilm Reactors (MBBR)
- Anoxic MBBR
- ECO Filters
- CSO Management
- MITA Cloth Filters
- Lamella Settlers
- Phosphorus Removal
- CHEMIX
- Flocculation Tanks
- Attenuation Tanks

Fast.
Flexible.
Built to perform.

AERO-MOD atac EDI EOSi MITAwt NAPIER-REID Nexom triplepoint

Axius Water companies

Products and Services

ATAC offers a comprehensive range of water treatment solutions tailored to meet diverse environmental needs. We're fully insured and BS EN ISO9001 & ISO14001 accredited to give our customers a complete peace of mind. Our specialists provide professional and fast response service throughout the United Kingdom.

Submerged Aerated Filters (SAF)

Biological treatment system that uses aeration to promote microbial growth for wastewater treatment.

Lamella Settlement Tanks

Stainless steel modular solids treatment system for efficient wastewater settlement.

Phosphorus Removal System

Specialised treatment solution for removing phosphorus from wastewater.

Pile Cloth Filters

Advanced filtration technology providing superior filtering.

MBBR

Biological treatment plant with free media for removing BOD & ammonia from wastewater.

Anoxic MBBR

Biological treatment plant with free media for denitrification in oxygen-deprived zones.

Coagulation/Flocculation Tanks

Treatment system that uses chemical additives to promote particle aggregation and efficient removal of solids.

ECO Filter

Rapid deployment filtration system that requires no power or services with high efficiency in BOD and ammonia removal.

Chemix

Coarse air bubble mixing system that offers maximum benefits for mixing ferric salts.

Vertical SAF (VSAF)

Biological treatment system that uses aeration to promote microbial growth for wastewater treatment.

Combined Sewer Overflow (CSO)

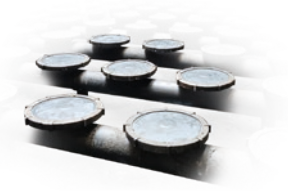
System designed to manage overflow from combined sewers during heavy rainfall events.

Attenuation Tanks

Storage system designed to temporarily hold excess water, attenuate backwash liquors, prevent flooding and system overload.

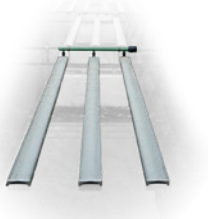
Process Train

Combines multiple proven treatment methods to ensure reliable performance and consistent results in managing contamination events.



Aeration Lane Refurbishment

Upgrades and maintainance of aeration systems in treatment plants.



AEROSTRIP® Fine Bubble Diffusers

Aeration systems with very low energy requirements.

Pumping Stations

ATAC pump stations are designed to move wastewater or stormwater.

Filter Bed Refurbishment

Restoration services for enhancing and extending the life of existing filtration systems.

Hire

All ATAC Products are available for hire. By hiring our equipment, you can rely on us to provide regular servicing and maintenance.

Tankering

ATAC maintains a diverse fleet of modern vacuum tankers equipped to handle any site requirements.

Service & Maintenance

ATAC provides comprehensive service and maintenance solutions for wastewater treatment systems.

Submerged Aerated Filters

The ATAC SAF is a stainless steel modular biological treatment plant that can be either purchased outright or rented to suit your needs. It is designed to deliver high treatment efficiency that easily achieves standards of 20mg/l TSS, 10mg/l BOD, and 5mg/l N or better.

The system is quick and easy to deploy, with numerous installation options available to suit different site requirements. Built on a proven and reliable design, it can also be configured in a vertical arrangement where space is limited.

The operational processes of SAF units are designed for robustness, reliability, and minimal operator involvement. The wastewater enters the first cell of the SAF unit and flows through the biomass media. The biomass feeds on the organic matter present in the wastewater, reducing the levels of BOD (Biochemical Oxygen Demand) and other contaminants. The clean effluent then exits at the surface of the final cell. SAF units are equipped with air control valves near access hatches, allowing for easy access and accurate process trimming to optimise performance.

SAF units can be used in various applications, including stand-alone treatment, emergency cover during refurbishment or breakdowns of other systems, supplementing or replacing existing systems, and as part of a complete sewage treatment works.

ATAC SAF is built to last with a lifespan exceeding 25 years. Suitable for backend nitrification (NSAF) for enhanced performance.

SAF Case Study

Surrey — Six SAF Units Hire Scheme

Project Overview

The Sewage Treatment Works receives flows from the village and its surrounding area with a total population of circa 5,400 PE. The existing rotating biological filter beds were becoming incapable of treating the ever-increasing flows from the catchment area. Due to the site starting to fail its discharge consent limits effluent from the site was being removed, with a constant turnaround of tankers transporting liquors elsewhere.

Our Solution

Based on the information provided by the client, we were asked to design a SAF system to treat 30l/sec, capable of meeting the required site consents. The design output required the build, supply, and installation of six SAF units with a combined footprint of over 100m^2 land area.

The six SAF units were configured into three streams each designed as two stages of Carbonaceous and Nitrifying.

We were also required to supply two submersible pumps complete with a control panel and a rotary lobe blower skid comprising of two 30kW variable speed-driven blowers. Each blower capable of delivering a minimum air flowrate of 1300m^3/hr.

This delivery was unprecedented with the challenges we faced, mainly being COVID-19 and the majority of the country in strict lockdown.

The project also required a lot of site logistical challenges organising a constant flow of six tankers and a 95 Tonne crane to position, with artic lorries delivering our equipment. All within a compact site with only a single track one-way road available. From placement of order and suitable type 1 roadstone base being supplied to us, ATAC managed to deliver the entire scheme in 7 weeks.

Results

Within the SAFs seeding period, regular sampling was carried out by the client's process team. The discharge BOD and ammonia levels were quickly decreasing, which allowed a subsequent decrease in the tankering regime until the site became in consent.

VSAF

VSAF can be used for both secondary treatment (BOD and ammonia removal after primary settlement tanks) and tertiary treatment (additional nitrification for existing humus tank effluents). It is built offsite which reduces construction time when compared to other on-site build options.

Another advantage of VSAF is its ability to allow gravity flow from the top of the unit into other forms of tertiary treatment, such as sand filters, if required. This integration simplifies the overall treatment process and provides more options for achieving desired effluent quality.

VSAF units require blowers sized according to the surface area (m^2) of the media to ensure effective scouring, which removes any dead biomass. The reduction in blower size not only results in cost savings but also contributes to energy efficiency.

- Stainless steel modular biological treatment plant
- Low maintenance requirements
- Quick and easy to deploy
- Efficient oxygen transfer
- Lower blower sizes
- Minimal operational input required
- 25+ Year lifespan

Smaller Footprint
One of the standout advantages of VSAF is its smaller footprint compared to conventional SAF units. This compact design allows for more flexibility in terms of installation, especially in areas where space is limited. The reduced size also contributes to lower construction costs and faster installation times.

Efficient Oxygen Transfer
Efficient oxygen transfer is crucial in wastewater treatment processes, and VSAF excels in this aspect. Thanks to its vertical design, the unit achieves a remarkable oxygen transfer rate of 5% O_2/m. This high efficiency is attributed to the depth of the system, allowing for effective aeration and oxygenation of the wastewater.

VSAF Case Study

North West Sussex — MBBR Upgrade

Client Challenge

ATAC was approached by a Water PLC client with the challenge of installing additional biological treatment into an already congested wastewater treatment works. With an extremely limited footprint to work with, ATAC's process team devised an innovative solution.

Our Solution

The team transformed a proven SAF design, positioning the external tank on a vertical plane instead of a conventional horizontal plane, creating the Vertical Submersible Aerated Filter (vSAF).

Average flow	1.5 l/s
Peak flow	6.3 l/s
Average influent BOD	30 mg/l
Average influent NH_3	10 mg/l
Effluent BOD	15 mg/l
Effluent NH_3	3 mg/l

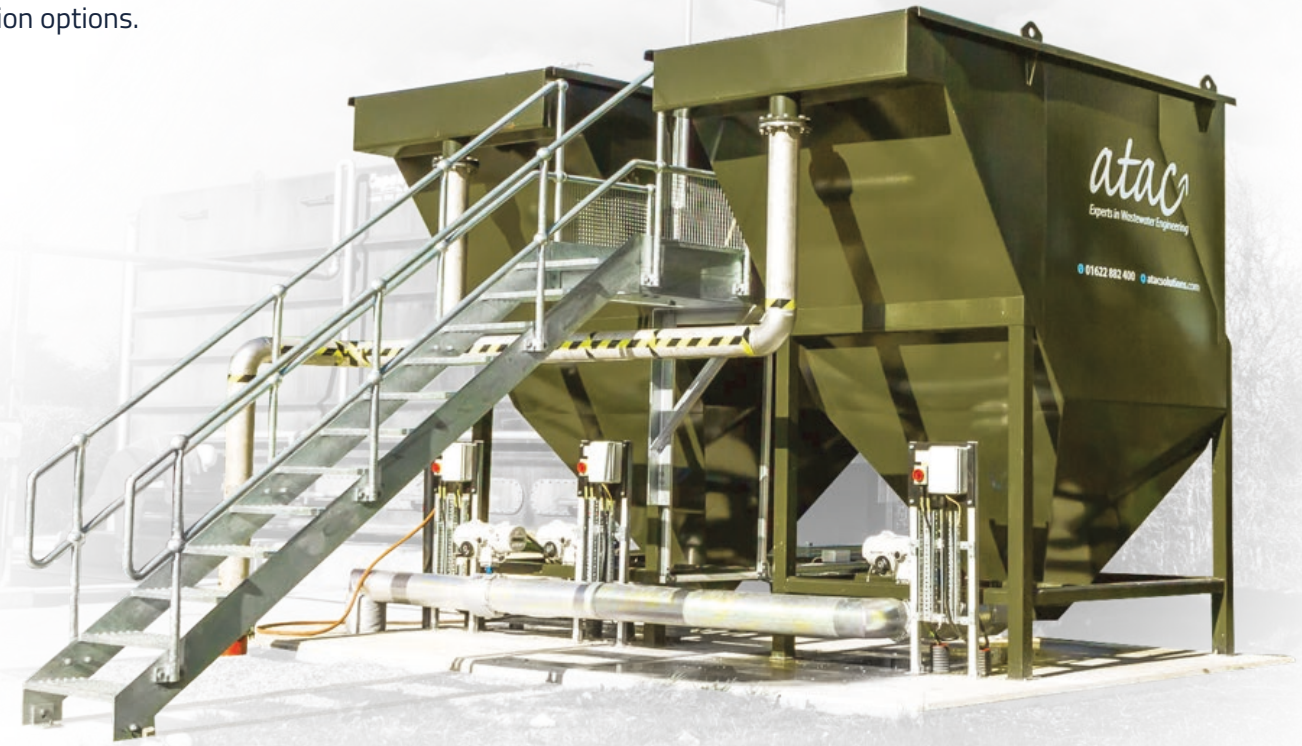
Based on average flow, each year the system is in operation we will contribute to the removal of:

- 11,264 kg BOD
- 1,453 kg NH_3

Lamella Settlement Tanks

The ATAC Lamella Settlement Tank is a stainless steel modular solids treatment plant that is available for either capital purchase or rental. Built to be low maintenance and robust, it is available in sizes up to 33 l/sec and is quick and easy to deploy with numerous installation options.

The system features a proven and reliable design with automated desludging available via actuated valve or pump. Requiring minimal operational input, it is built to last with a lifespan exceeding 25 years.



ATAC Lamella Unit is an essential component of settlement used in various industrial and wastewater treatment processes. These units are designed to enhance the efficiency of solid-liquid separation and improve the overall performance of the treatment system.

The ATAC Lamella Units are constructed using 304 stainless steel, ensuring its durability and resistance to corrosion. This tank material is specifically chosen for above-ground installations, providing longevity and reliability in various environmental conditions.

The lamella units are equipped with a modular tubular media system. This media is specifically designed to enhance the settling process by providing a large effective surface area for solid particle capture. The lamella media is arranged in a zone configuration, allowing for efficient upward flow of effluent through the media. With an effective surface area of 13m²/m³, the lamella media ensures optimal solids removal and improves the overall treatment efficiency.

For applications requiring higher treatment capacities, the Lamella Unit can be installed in parallel mode, fed from a bespoke hydraulic weir splitter chamber provided by ATAC. We are currently supplying 6 units in parallel mode and could use more if required.

This configuration allows for increased treatment efficiency and enhanced flexibility in handling varying flow rates and solids loads. The multiple unit installation is particularly beneficial in large-scale wastewater treatment plants or industrial processes with high effluent volumes.

Lamella Case Study

Hampshire — WTW Upgrade to handle increased flows while complying with permit flow conditions

Project Overview

The Clients Wastewater Treatment Works, constructed in the 1960s, serves a population equivalent of 2,164 in the UK. The facility processes sewage collected through gravity sewers and discharged via the pumping station. The site had seen minimal investment since the addition of a humus tank and sludge storage tanks in the 1980s and 1990s.

Challenge

The primary driver for the upgrade was the need to enable the works to handle increased flows while complying with permit flow conditions. The facility needed to maintain strict effluent discharge permits, including BOD of 25 mg/l, TSS of 45 mg/l, COD of 125 mg/l, with a dry weather flow (DWF) of 750m³/day and Full Flow to Treatment (FFT) of 26 l/s.

Our Solution

The core of the solution centred on the installation of two 50m² ATAC Lamella units with auto-de-sludge systems, operating in parallel with existing primary settlement tanks. An automated sludge removal system was installed to enhance operational efficiency.

The comprehensive site upgrade encompassed several key areas. The pumping system was enhanced through the installation of duty/standby Xylem dry well submersible pumps, featuring variable speed operation to manage flow rates effectively. An automated control system with an exercise regime was implemented to prevent sewage stagnation.

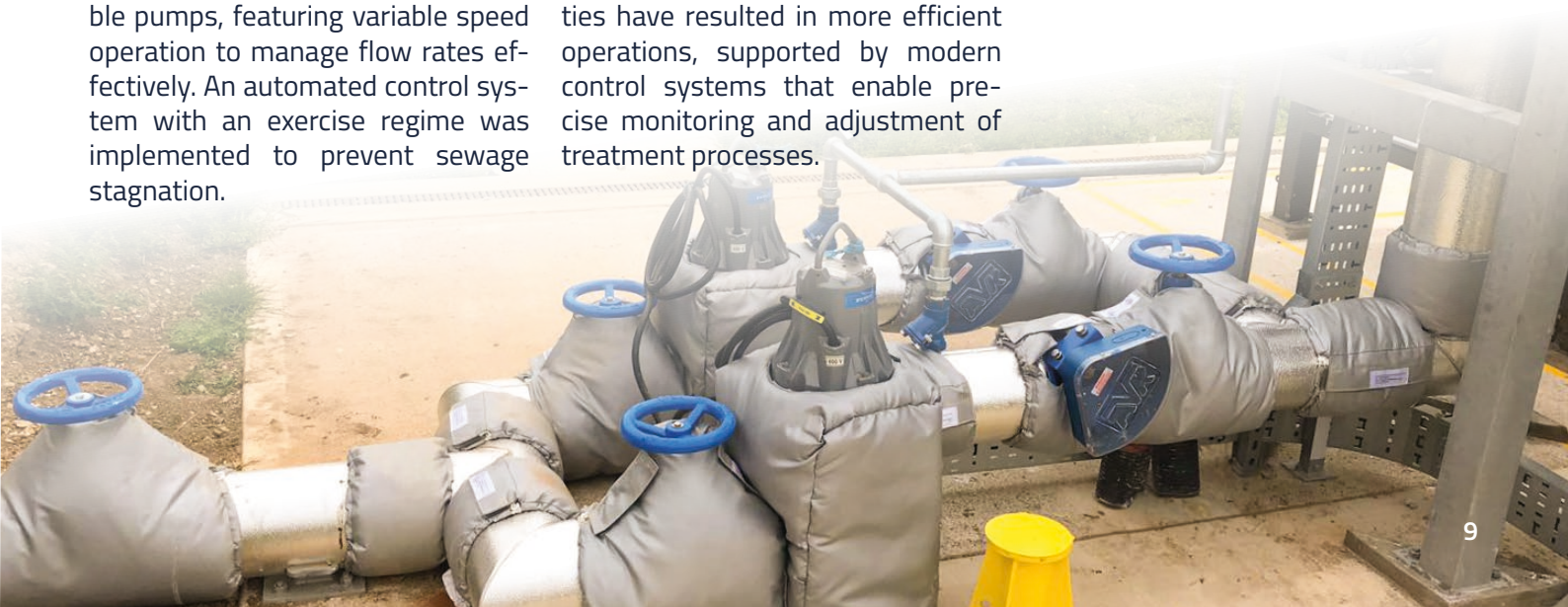
The filter system underwent modernisation with the replacement of existing filter bed distributors with Jacopa Syphonic type units, complemented by the installation of a new dosing syphon and Copa sac chamber. The control systems were upgraded with a new Local Control Panel featuring PLC and HMI interface, automated de-sludging sequences, and comprehensive flow monitoring and control systems.

The system operates through a sophisticated dual-flow approach. Flows up to 15 l/s are handled through gravity via the existing flume and primary tanks. When incoming flow exceeds 15 l/s, additional flow is pumped to the Lamella tanks. The automated de-sludging system includes fail-safe mechanisms, while maintaining manual override capabilities for maintenance purposes.

Safety was prioritised through the installation of designated walkways for safe access to equipment, along with fail-safe valve systems for power failure scenarios.

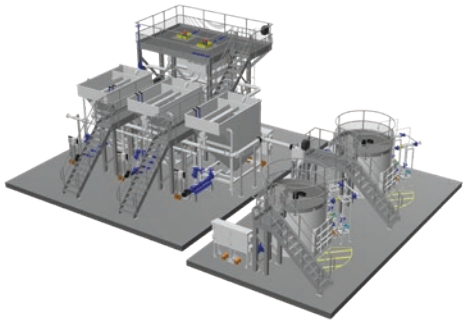
Results

The upgrade has delivered significant improvements across multiple areas. Treatment capacity has been substantially increased, while flow management has been optimised through the new control systems. The enhanced automation and improved sludge handling capabilities have resulted in more efficient operations, supported by modern control systems that enable precise monitoring and adjustment of treatment processes.



Phosphorus Removal

ATAC's P Scheme Phosphorus Removal Technology
ATAC's P Scheme installations address one of the most urgent challenges in wastewater treatment—phosphorus removal. Elevated phosphorus levels in effluent can cause eutrophication in receiving waters, harming ecosystems and biodiversity. With regulators now setting discharge limits as low as 0.25–0.5 mg/L P, utilities require reliable, high-performance systems. ATAC's P Schemes integrate coagulation tanks, lamella settlement, and advanced cloth filtration into an optimised process.



A typical configuration includes:

Flash Mixing Tank
Rapidly disperses coagulant to initiate immediate chemical reactions.

Flocculation Tank
Gentle mixing forms strong phosphorus-rich flocs without shearing.

Lamella Settlers
High-rate solids separation removes the bulk of flocs, reducing load on filtration.

MITA Cloth Filters
Capture fine solids and residual phosphorus particles.

Automated Control Systems
HMI-integrated precision control for dosing, backwash, and process efficiency.

This combination of proven mechanical separation and smart automation ensures cost-effective, low-maintenance phosphorus removal, maintaining compliance under variable flow conditions.

P-Scheme Case Study

Buckinghamshire, WTW Site Upgrade — Phosphorus Removal

Project Overview

ATAC Solutions was commissioned to upgrade the Water Treatment Works Site in Buckinghamshire, to meet new stringent phosphorus discharge standards. The project centred on implementing an advanced system to achieve enhanced phosphorus removal while maintaining operational efficiency.

The Challenge

The treatment works faced increasingly stringent regulatory requirements, with new phosphorus standards set at 0.5mg/l P and iron consent levels of 4mg/l LUT and 8mg/l UT. The facility needed to achieve a final effluent TSS average of 5mg/l to meet the 0.25mg/l P consent. Additionally, the system had to be capable of handling variable flow rates, from an average of 16.5 l/s up to peak flows of 38 l/s, presenting a significant engineering challenge.

Our Solution

ATAC Solutions developed and implemented a sophisticated three-stage treatment system designed to optimise phosphorus removal. At the heart of the solution was the installation of a complete 8/40 MITA system, incorporating excellent technology for efficient treatment:

- Flash mixing tank
- Flocculation tank
- MITA filter system

MITA Cloth filter system, is effectively captures suspended solids and phosphorus-rich flocs before the treated water is discharged. The entire process is monitored and controlled through an integrated control panel system, ensuring consistent performance and automated operation.

Results and Achievement

The implemented solution has proven highly successful, consistently achieving phosphorus reduction to meet the required 0.25 mg/L standard. The system effectively reduces suspended solids to 6 mg/L while handling the full range of flow variations.

Most importantly, the project was completed and commissioned within the specified timeframe, meeting all client expectations and regulatory requirements.

The upgrade not only meets current regulatory standards but also provides a flexible and reliable system that will serve the facility well into the future.

Pile Cloth Filters

The filters utilise special types of cloth made from free fibres, which ensure high mechanical strength and excellent separation of solids. The cloth is either fitted on a drum or stacked on a shaft, depending on the model. These filters are made of durable AISI 304 stainless steel, ensuring longevity and resistance to corrosion.

The operating principle of MITA Pile Cloth Filters is based on gravity flow. The unit remains completely at rest during the filtration process, eliminating the need for reserve units or service water. The water to be treated is directed to the filter's containment tank, which operates submerged. As the water passes through the filter cloth, the solids are captured and retained by the fibres. The clean water is then discharged through the drum or the central shaft of the filter.

To maintain optimal filtration capacity, MITA Pile Cloth Filters are equipped with a backwash system. When the pressure drop reaches a certain level, the backwash device is activated. This device, consisting of suction pumps and nozzles, removes the solids trapped in the cloth, restoring the filter's efficiency. The removed sludge and suction water are returned upstream, minimising waste and environmental impact.

Filtering surface depends on MITA Filter model:

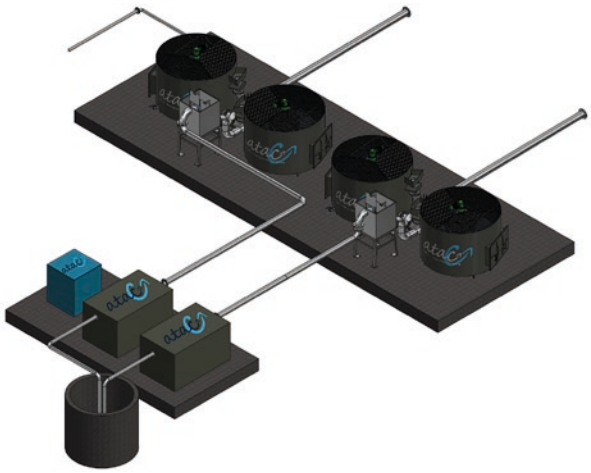
- Vertical range 2/10–6/30 PECV VM units (10–30m² cloth area)
- Horizontal range from 2/10–32/160 PEC VM units (10–160m² cloth area)
- Drum range TF2–TF6 VM units (2–6m² cloth area)

By incorporating these filters into the treatment process, impressive results can be achieved, with solids removal rates between 50% and 80% of the TSS in the feed sample. The filters can reduce the effluent's TSS levels to as low as <5 mg/L and achieve total phosphorus values of 0.25 mg/L after ferric additions.

MITA Pile Cloth Filters are versatile and can be applied in various wastewater treatment scenarios. Their primary use is in tertiary treatment, where they act as a final step before the discharge of treated wastewater. These filters have proven to be effective in reducing both solids and phosphorus levels, ensuring compliance with strict environmental regulations.

MITA Case Study

North West Sussex — Four MITA Cloth Filters Hire Scheme



Project Overview

Sewage Treatment Works receives flows from a town in North West Sussex (population approximately 125,000 PE), plus all flows from Gatwick airport and its surrounding areas.

The site has existing disc filters which had been constantly receiving flows that had been dosed with ferric as part of upstream treatment. Ferric has a tendency to blind the small holes associated with disc filters. To remove the ferric screens from the discs to ensure ongoing efficiency requires regular chemical cleans with the solution such as citric acid, and in doing so the acid solution subsequently deteriorates the rubber seals allowing water with solids to bypass the filters.

ATAC were tasked with recommending a solution to combat this problem with the following parameters given to us by our client; Suspended solids from the primary settlement tanks up to 35ppm with a required output from our equipment being less than 10 ppm.

Due to the above issues with the deterioration of the disc filter seals the site was constantly at risk of polluting the local watercourse, therefore, our client needed a rapid solution.

Our Solution

ATACs' recommendation was to install four MITA Cloth Filters upstream of the existing disc filters to treat the flows and remove solids containing ferric salt, therefore reducing the loading to the existing disc filters.

Two 6" diesel pumps were set up to take flow of 140l/sec to equally distribute between four Cloth Filters via bespoke built distribution chambers.

This was executed by our in-house experienced projects team, including design and back-office staff.

In just 7 working days from receipt of a purchase order, ATAC mobilised, Installed, and commissioned four of our cloth filters — complete with distribution chambers, ATAC diesel pumps, control panels, hoses, etc.

Results

Our client immediately saw the desired results and, utilised the solution for 18 months. During this period MITA filters required minimal operator intervention and maintained site effluent in consent with regulations.

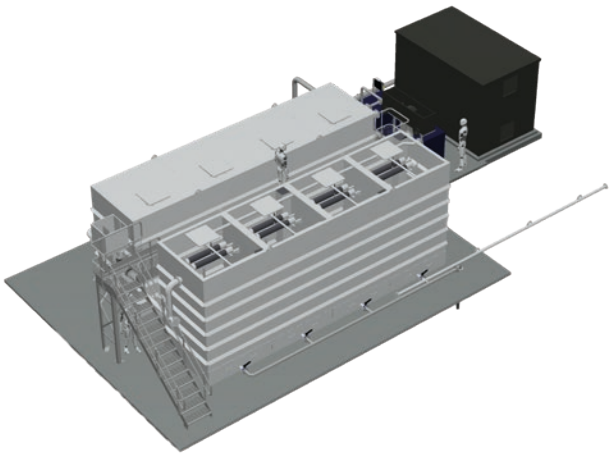
MBBR

MBBR (Moving Bed Biofilm Reactor) represents a significant leap towards the expansion of our treatment capabilities. Traditionally, ATAC has utilised structured media in our SAF units, achieving exceptional results and influencing UK water companies' design standards. However, the company has now ventured into the realm of MBBR treatment, recognising the burgeoning market demand for MBBR units.

The proposed MBBR technology entails the construction of a single cell box, aligning with ATAC's commitment to staying at the forefront of wastewater treatment advancements. Drawing inspiration from the design of an ATAC 44 SAF cell, the MBBR design seeks to maximise treatment capacity within the same tank size.

MBBR Case Study

North West Sussex — WTW Site Upgrade



Project Overview
ATAC successfully designed and delivered a bespoke Moving Bed Biofilm Reactor (MBBR) installation at a wastewater treatment site in North West Sussex. The project was undertaken to meet more stringent ammonia and phosphorus discharge consents, while also improving operational reliability for a rural site serving a population equivalent (PE) of 600.

This upgrade builds upon ATAC's proven SAF (Submerged Aerated Filter) technology, with a tailored adaptation for MBBR applications, providing enhanced process stability and performance in challenging site conditions.

The Challenge
The existing treatment infrastructure consisted of two ATAC 44 SAF units installed approximately five years earlier. Although these units generally met performance expectations, they were periodically impacted by water snail infestations. These infestations compromised the biofilm, leading to occasional spikes in ammonia (NH_3) levels.

Despite ATAC's efforts to mitigate the issue through operational adjustments, evolving environmental regulations, including a tighter ammonia consent of 4 mg/l and strict phosphorus limits, necessitated a long-term solution.

Our Solution
Following a technical review and collaboration with the client, ATAC proposed replacing the SAF units with custom-built MBBR 44/24 systems, engineered specifically to address the site's unique challenges.

Results and Achievements
Despite challenging influent conditions, including ammonia levels occasionally exceeding 50 mg/l due to low hydraulic loadings — the new MBBR system has consistently delivered sub-1 mg/l NH_3-N effluent concentrations.

This unit's performance:

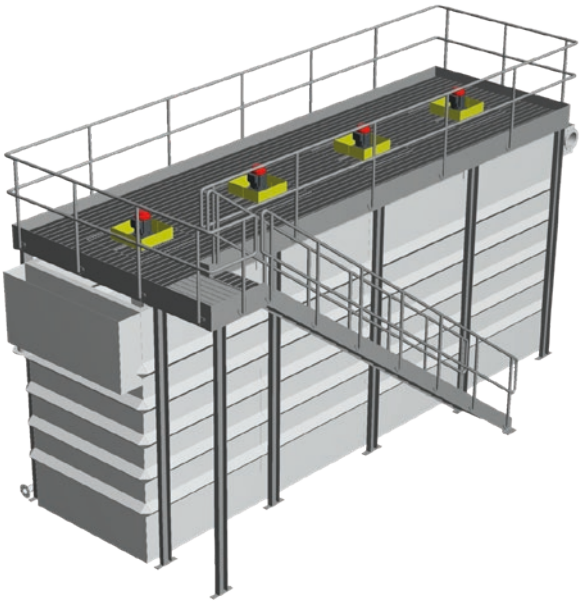
- Exceeds the required 4 mg/l consent limit, even under peak load conditions.
- Demonstrates exceptional efficiency for a single-stage biological treatment process.
- Validates the MBBR technology as a robust, low-maintenance alternative to SAF in sensitive rural applications.

The installation has been well received by both the client and the ATAC team, reaffirming ATAC's commitment to delivering innovative, site-specific wastewater treatment solutions that adapt with regulatory demands.

Anoxic MBBR

Advanced Nutrient Removal

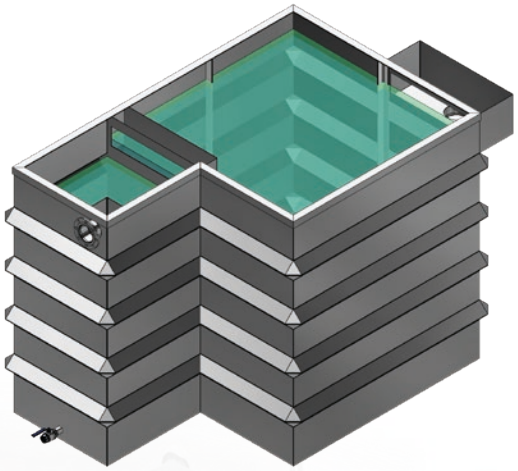
The system features a four-cell ATAC MBBR configuration with continuous mixing to maintain consistent anoxic conditions throughout the treatment process. The design treats settled sewage combined with recycled nitrate-rich effluent to achieve effective denitrification performance.



Intelligent pump control is implemented through variable speed drives (VSDs) and integrated flow monitoring systems, enabling the treatment process to dynamically match fluctuating demand conditions. Real-time process optimisation is achieved through integrated sensor arrays and SC1000 monitoring equipment, which continuously track and adjust nitrate levels for optimal treatment efficiency.

Treated effluent is conveyed via gravity-fed flow to downstream filter beds, where further biological oxygen demand (BOD) reduction and nitrification treatment occurs. The entire system has been designed to meet AMP8 requirements, incorporating advanced automation capabilities and remote monitoring infrastructure for enhanced operational efficiency and regulatory compliance.

Coagulation Tanks



Our coagulation tanks are designed to provide optimal mixing and reaction time for effective chemical treatment in wastewater applications. These systems utilise ferric salts or other coagulants to efficiently remove phosphorus and suspended solids from wastewater streams. The tanks are engineered with precision to ensure proper contact time between the coagulant and the wastewater, maximising treatment efficiency.

The coagulation process works by destabilising particles in the wastewater, allowing them to aggregate into larger flocs that can be more easily removed through subsequent filtration or settling processes. We offer a range of tank sizes to accommodate different flow rates and treatment requirements, from small-scale domestic applications to large industrial installations. These coagulation tanks are essential components in various wastewater treatment applications including municipal sewage treatment plants, industrial effluent treatment facilities, and specialised phosphorus removal systems. Our tanks can be configured with dual chamber mixing systems or inline mixing devices depending on the specific requirements of each project and the characteristics of the wastewater being treated.

Each coagulation tank is manufactured to high standards and can be supplied as part of a complete turnkey solution or as standalone equipment. The systems are designed for ease of operation and maintenance, with robust construction ensuring long-term reliability. We provide full technical support including system design, installation guidance, and ongoing maintenance services to ensure optimal performance throughout the equipment's operational life.

Our experience in wastewater treatment enables us to design the most appropriate coagulation tank configuration for each application. Our technical team can advise on chemical dosing rates, mixing requirements, and integration with downstream treatment processes such as lamella clarifiers or cloth filters to achieve the desired effluent quality standards.

ECO Filter

The ATAC ECO Filter is a rapidly deployable biological filter engineered to effectively treat a wide range of effluents, from ground water to raw sewage. This technology has been developed to treat excess wastewater, which is highly diluted by ground water being pumped out of sewers, to an elevated standard that surpasses previous achievements. Once the effluent passes through the ECO Filter, it is sufficiently treated to be safely returned to the environment.

Notably, the ECO Filter has been designed for rapid deployment and does not require any additional power or services to operate. With just two connections, the unit is ready to be put into operation. Extensive trials have demonstrated that the ECO Filters rapidly enhance the Dissolved Oxygen Saturation to above 95% once commissioned. Moreover, the formation of a biofilm within the filter leads to a noteworthy reduction in BOD and Ammonia loads within the effluent, with typical removal rates of 30-40%.

CHEMIX

Coarse Air Bubble Mixing System

ATAC CHEMIX systems deliver a vigorous coarse air bubble pattern at the point of application, promoting efficient mixing and optimising the benefits of ferric dosing in the wastewater industry. Systems can be customised in a variety of configurations to suit a wide range of applications and are available with either standard or bespoke air diffusers. We also offer bespoke GRP dosing troughs, which provide even distribution of ferric across the width of a dosing chamber, further enhancing mixing efficiency.

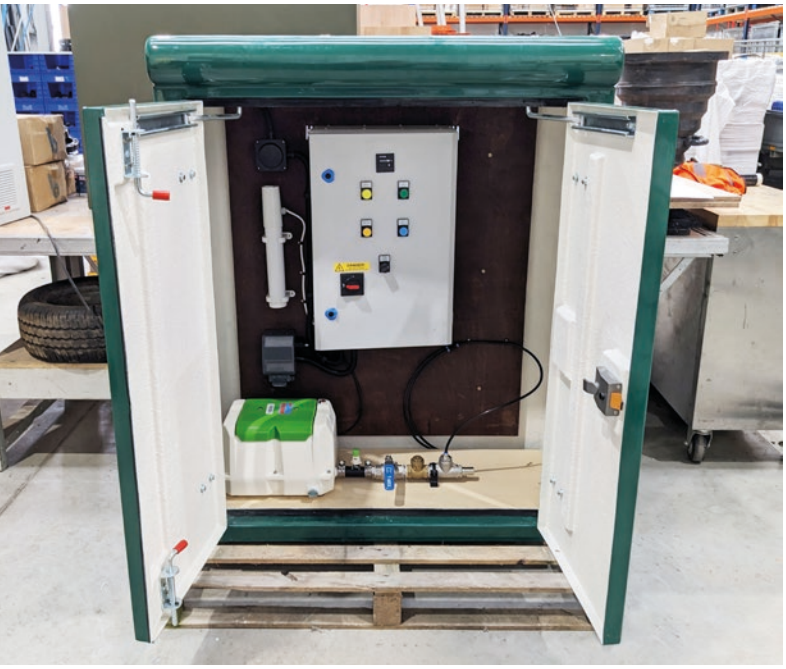
The **CHEMIX Standard** system consists of one or two duty-only or duty/standby air diaphragm blowers. The **CHEMIX Large** version includes one or two side-channel blowers, also configured for duty-only or duty/standby operation. It is suitable for larger applications where greater airflow is required. These systems retain the same functionality as the air diaphragm CHEMIX system but include integral Variable Speed Drives, allowing the mixing energy to be fine-tuned on site.

Adjustable high and low-pressure switches protect the system in the event of a hose or diffuser blockage or blower failure. Alarms are displayed locally, and telemetry outputs are provided for remote monitoring.

Both Chemix versions are supplied in a roadside kiosk with a local Control Panel, high and low-pressure switches, an LED light fitting and a thermostatically controlled tubular heater. The air delivery manifolds have mechanical NRV's and PRV's, and each system is supplied with up to 20m of wire reinforced air delivery hose.

CHEMIX can be configured to suit a wide variety of mixing chamber sizes and depths, delivering tailored solutions to meet specific site and client requirements.

Designed by ATAC Solutions, CHEMIX systems are user-friendly, easy to maintain, efficient, and cost-effective.



ATAC Process Train

CSO Treatment

ATAC Process Train Equipment represents a proven and trusted technology solution for the water and wastewater industry:

- **Screening:** Removes large debris.
- **MBBR (Moving Bed Biofilm Reactor):** Breaks down organic pollutants.
- **Cloth Filtration:** Removes fine suspended solids.
- **UV Unit (Optional)**: For disinfection.

Key System Benefits:

- **Proven Reliability:** Built on well-established water treatment technologies.
- **Flexible Deployment:** Modular design allows for quick installation and scalability.
- **Robust Construction:** Engineered for durability in challenging environments
- **Regulatory Compliance:** Meets or exceeds industry standards.
- **Comprehensive Treatment:** Multiple treatment stages ensure thorough contamination management.
- **Emergency Response:** Rapid deployment during CSO events.
- **Temporary Treatment:** Support during facility maintenance or upgrades.
- **Remote Locations:** Areas without permanent infrastructure.
- **Continuous Protection:** Long-term water quality management.

Versatile Applications

Our Process Train equipment offers a sustainable alternative to traditional tankering operations during CSO events. By providing on-site treatment capabilities, we help water companies eliminate or significantly reduce the need for continuous tanker movements, resulting in substantial cost savings and improved community relations. This approach not only addresses the financial burden of 24/7 tankering operations but also resolves the persistent concerns of local residents regarding noise, traffic, and disruption in their neighbourhoods. ATAC is committed to protecting our water resources and public health. Our advanced treatment systems provide effective solutions for managing water pollution, helping to preserve our rivers and seas for future generations.

CSO Case Study

North Hampshire — Trial CSO MITA Performance

Project Overview

Trial Site WPS is located in North Hampshire and suffers from groundwater infiltration especially during wet weather periods and storm events presenting a risk of flooding to the villages downstream. One of the mitigation measures against the risks of groundwater infiltration/combined sewer overflow is over-pumping. This involves discharging to the local watercourse when the WPS cannot handle excess infiltration flows.

During an over-pumping event the risk of contamination to the watercourse needs to be minimised as much as possible. At Trial Site WPS, initially over pumped flows went through a screening process and then to UV light treatment equipment before being discharged to the stream. Water Company wanted to improve the discharge quality by removing suspended solids and any associated BOD and NH_3 concentrations in the effluent before discharging to the stream.

Our solution

ATAC proposed installing a MITA 4/20 PECV cloth filter between the screening and UV process. The other advantage of installing the cloth filter was to improve the transmissivity of the effluent so that the UV treatment could achieve a higher bacteria kill and achieve a better percentage coliform efficiency.

Results

The results from the trial showed an average suspended solids removal rate of 76.6% with 43.6mg/l before treatment and 9.6mg/l after treatment. Consequently, over 50% reduction was seen in BOD and COD concentrations on average, going from 32.1mg/l to 15.4mg/l and 80mg/l to 30.6mg/l, respectively. The results show that the MITA cloth filter is a good solution to reducing the suspended solids a significant amount before it enters the watercourse and can provide a proven method of treatment for storm / ground water discharges from overwhelmed pumping stations.

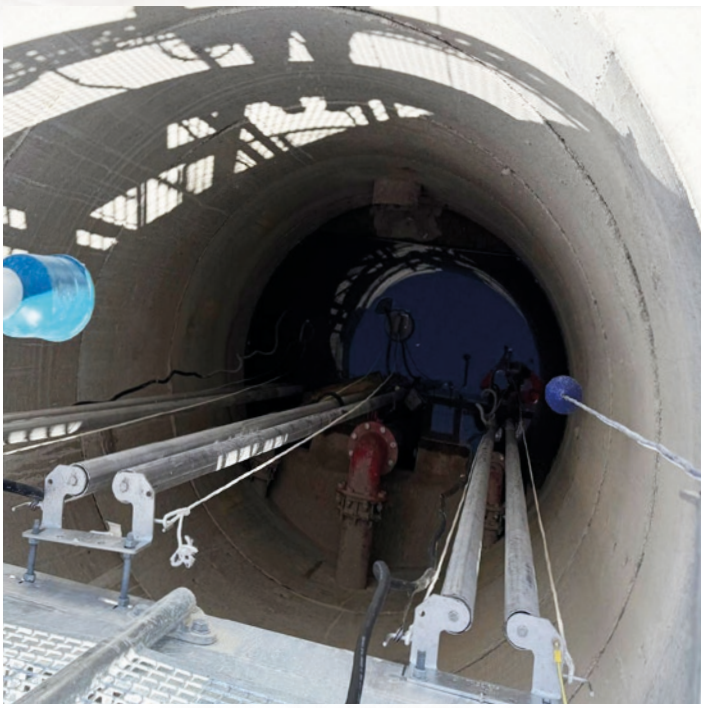
It must be considered that the limitation of this trial was that it was only carried out for a short period of time and during dry weather conditions in June & July. Wetter weather during the winter months may produce different results and this should also be trialled to confirm the performance of the filter all year round.

The trial was successful and proved that the MITA cloth filter can perform well on CSO influent and remove a high percentage of solid particles and associated BOD and COD. The success of this trial provides confidence in the capability of these filters being installed on further sites with similar issues like Trial Site WPS, helping to reduce the environmental impact on local watercourses.

Pumping Stations

ATAC Solutions supports clients throughout the entire lifecycle of their pumping stations, from initial design and installation through to ongoing maintenance and upgrades. Our experienced team provides comprehensive commissioning services, operator training, and responsive technical support to maximise system uptime and efficiency. With our commitment to service excellence and deep understanding of water industry challenges, we deliver pumping station solutions that provide long-term value and peace of mind for our clients.

Whether for sewage transfer, stormwater management, or process water handling, our pumping stations deliver dependable performance across a wide range of flow rates and operating conditions.



- Gravity fall from the inlet
- Flow balancing for operational control
- Offline construction with no service disruption
- MCERT-certified flow metering
- Full compliance with new client standards, including bypass configuration

We offer both packaged systems and bespoke designs tailored to specific site requirements. Each installation features high-quality pumps, motors, and control panels, all integrated to provide optimal performance and ease of maintenance. We utilise industry-leading components and adhere to strict quality standards, ensuring that every pumping station meets regulatory requirements and client specifications. Our modular approach allows for scalability and future expansion, providing flexibility as operational needs evolve.

Pumping Station Case Study

Hampshire — Pump Station to Reduce Premature Storm Flows

ATAC Solutions were asked to investigate reducing premature storm flows from WTW in Hampshire and provided with a proposed design by a Water Company.

The WTW sits in an area of outstanding natural beauty and in a SSSI, discharging into the a river – the project driver was to prevent premature storming. The existing site only had a small amount of flow balancing so effluent pumped to the site from the terminal pump station during storm events could easily exceed the balancing capacity and overflow into the storm tanks.

Working closely with the client's engineers, ATAC proposed installing a new pump station with enough volume to provide suitable balancing and thus prevent premature overflow to the storm tanks.

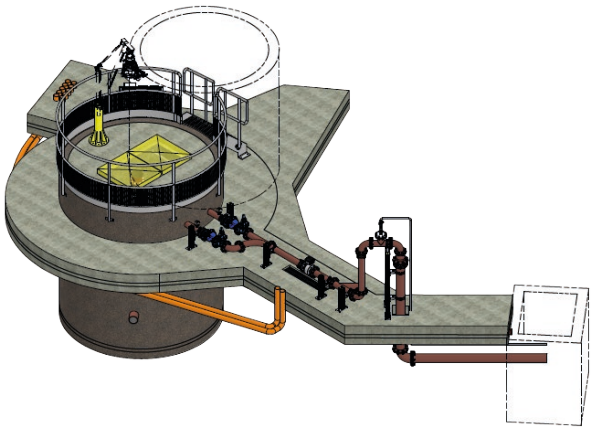
The site access was very restricted and location made for a challenging build process but through careful and thorough management we were able to excavate and create the pump station.

The excavation of the area started in early June 2024.

The new Pump Station was designed to include a new MCERT flow meter to accurately measure flows being discharged by the station and provide feedback for pass forward pump speeds; therefore enabling the pumps to maintain maximum balancing volume within the Pump Station.

Part of the project also involved supplying a new MCERT flow meter on the rising main to enable flow measurement of flow to treatment, this flow meter was incorporated into the Pump Station Discharge pipework.

The new Pump Station went online mid September 2024 (before the end of September regulation date) and this has dramatically reduced premature storm flows.



AEROSTRIP®

The AEROSTRIP® fine bubble diffuser was created with the aim of achieving the lowest energy demand. The reference list covers over 20 years, including municipal and industrial wastewater treatment plants all over the globe. The low profile allows the extremely durable membranes to be installed directly on the floor of an aerated tank, resulting in unbeatable full blow-in depth.

- 400,000 pores per m² of membrane surface
- Up to 20 years lifespan
- Extremely low energy consumption
- Low maintenance and reliability
- Oxygen transfer efficiency (SOTE) up to 60%
- Standard aeration efficiency (SAE) from 4-6 kgO_2/kWh
- Diffuser area 5-150 $Nm^3/h/m^2$
- Available in stainless steel and PVC

The advanced perforation style allows for pores of varying shape and size, which directly influence the diffuser's pressure loss. This ensures that every single membrane has the same resistance (pressure drop) to the airflow. The advantage: the membrane properties can be adapted to the specific on-site requirements.

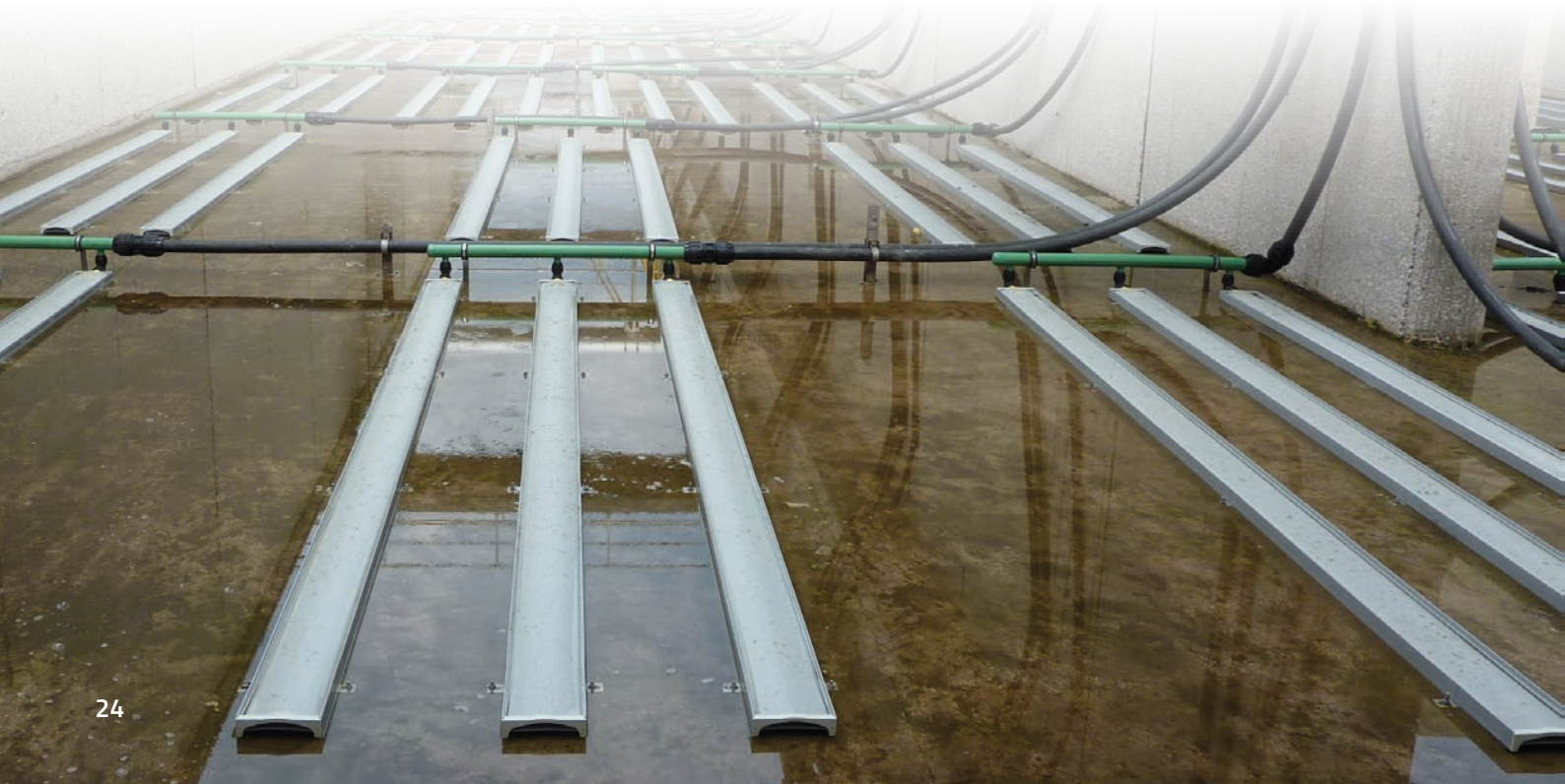
The modular design allows for various layouts and configurations, suitable for different tank shapes and process requirements, including MBBR/IFAS systems.

For applications requiring maximum oxygen input and mixing, a full-floor coverage layout ensures even air distribution throughout the entire basin.

ATAC is an authorised UK supplier of AEROSTRIP® for both new installations and refurbishments, delivering industry-leading aeration technology, competitive pricing, and expert support nationwide.

ATAC also holds exclusive refurbishment distributorships in the following regions:

- Yorkshire Water
- Northumbrian Water Group (NWG)
- Anglian Water Services
- Southern Water



Attenuation Tanks

Attenuation tanks are used to store backwash liquors from our MITA filters if the site can't handle the backwash pump flow rate.

Key Features

- Multiple standard sizes available
- Custom flow rate configurations
- Robust and reliable construction
- Meets industry standards
- Expert installation and support
- Comprehensive treatment options
- Cost-effective solutions

Our attenuation tanks are engineered to provide reliable flow control and storage solutions. These versatile systems are primarily designed to store backwash liquors from MITA filters when sites cannot handle the full backwash pump flow rate, enabling controlled return of flows at lower rates.

Key Benefits

- Versatile flow management for various applications
- Site-specific maximum flow configurations
- Ideal for MITA filter backwash storage
- Controlled flow rate management

Available Models

Available in 4 standard sizes to suit different requirements:

Model	Capacity
ATTEN-1	0.9m³
ATTEN-2	2.5m³
ATTEN-3	3.7m³
ATTEN-4	7.0m³

Aeration Lane Refurbishment

ATAC Solutions provides comprehensive aeration lane refurbishment services to optimise wastewater treatment efficiency. Our experienced team evaluates existing systems, removes debris, and implements modern aeration technologies to improve oxygen transfer and reduce energy consumption. We ensure minimal disruption while upgrading critical infrastructure components.

- **System Assessment**
  Evaluate oxygen transfer efficiency
- **Debris Removal**
  Complete cleaning of aeration lanes
- **Diffuser Installation**
  Supply and fit new diffuser systems
- **Pipework Upgrades**
  Replace and optimise air distribution
- **Instrumentation**
  Install monitoring and control systems
- **Baffle Installation**
  Improve flow patterns and efficiency
- **Mixer Integration**
  Enhanced mixing capabilities
- **Full Commissioning**
  Ensure optimal system performance

System optimisation
Our refurbishment process focuses on maximising oxygen transfer efficiency while minimising energy consumption. We utilise advanced testing methods to assess system performance and implement targeted improvements to achieve optimal results.

Quality Installation
ATAC Solutions ensures high-quality installation of all components, from diffusers to instrumentation. Our experienced team follows industry best practices and maintains strict quality control throughout the refurbishment process.

Ongoing Support
We provide comprehensive support after completion, including system monitoring, maintenance guidance, and optimisation recommendations to ensure long-term performance and efficiency of your refurbished aeration system.

Aeration Lane Refurbishment Case Study

East London — Refurbishment of 12 Aeration Lanes

The client's STW operates three separate Activated Sludge Plant (ASP) stages. After the successful refurbishment of ASP Stage 2, ATAC Solutions was nominated as the principal contractor to carry out a comprehensive refurbishment of 12 aeration lanes. Project included mechanical, civil, electrical, and ICA scopes under CDM 2015 Regulations. ASP Stage 1, due to its age and deteriorating condition, required a full re-doming of its 12 aeration lanes.

Re-Doming of 12 Aeration Lanes

- Pipework Installed: 1,896 meters
- Diffusers Replaced: 4,254 units
  - 2 Small Lanes: 216 m, 504 diffusers
  - 10 Large Lanes: 1,680 m, 3,750 diffusers

Enabling Works

- Over-pumping into the common distribution chamber
- Supply of pumps, bunded fuel cube, drip trays, road crossing ramps
- Vacuum extraction and cleaning of grit and sludge
- On-site decanting and grit drying
- Removal and disposal of redundant pipework and diffusers

Installation and Testing

- New PVC pipework and Sanitaire 9" diffusers
- Leak testing and pattern testing of each lane
- Proving and recovery periods of 2–4 weeks per lane
- Minor civil works to support mechanical installation

Safety & Compliance

- Full compliance with CDM 2015 as Principal Contractor & Principal Designer
- Site welfare setup and secured compound
- Scaffolding for safe access and egress
- Provision of GA drawings and full documentation

Environmental and Performance Outcomes

Commissioned Aeration Lane Performance (up to April 2025):

- Total Actual BOD Treated: 7,896,554 kg
- Total Actual Ammonia (NH_3) Treated: 1,554,741 kg
- April 2025 Contribution Alone:
  - BOD: 1,042,039 kg
  - NH_3: 205,166 kg

Each refurbished lane saw consistent increases in biological load processing efficiency. For example:

- Lane 13 (commissioned March 2024) processed **1.2 million kg BOD** and **235,482 kg NH_3** by March 2025, with an additional **106,787 kg BOD** and **21,025 kg NH_3** in April 2025.
- Lanes completed later in the schedule (e.g., Lane 11 commissioned mid-April 2025) demonstrated strong early performance with **54,919 kg BOD** and **10,813 kg NH_3** within just 18 days.

Filter Bed Refurbishment

ATAC provides filter bed refurbishment services to restore and optimise wastewater treatment efficiency. Our experienced team manages the entire process from planning through implementation, ensuring minimal disruption to your operations while delivering high-quality results.

Key Services

- Complete trickling filter media replacement
- Infrastructure repairs including tiles and pipework
- Filter arm and drive system renovation
- Comprehensive system cleaning and flushing
- Temporary biological treatment solutions
- Project planning and process management
- System optimisation and performance assessment
- Ongoing support and maintenance guidance

Professional Refurbishment Solutions

Our refurbishment process focuses on maximising filter bed efficiency while minimising operational disruption. We utilise proven methodologies to assess system performance and implement targeted improvements, ensuring high-quality installation of all components from filter media to distribution systems.

Continuous Operation Support

During refurbishment works, we provide temporary equipment to maintain biological treatment capabilities, ensuring your facility remains operational. We offer comprehensive post-completion support, including system monitoring, maintenance guidance, and optimisation recommendations to ensure long-term performance of your refurbished filter bed system.

Service & Maintenance

ATAC provides service and maintenance solutions for wastewater treatment systems. Our team of experienced engineers offers regular maintenance, emergency repair, and system upgrades to ensure optimal performance and compliance with regulatory standards.

- Regular scheduled maintenance and inspections
- Emergency repair and call-out services
- Biological treatment system servicing
- Mechanical equipment maintenance
- Aeration lane maintenance and servicing
- Filter bed refurbishment and media replacement
- System cleaning and optimisation
- Performance monitoring and compliance testing
- Preventative maintenance programs
- System upgrades and capacity enhancements
- 24/7 emergency support
- Confined space entry and inspection services
- Comprehensive reporting and documentation

Our service and maintenance packages include regular inspections, cleaning, and repairs to keep your system running smoothly. We also offer system upgrades and improvements to enhance efficiency and capacity, ensuring your wastewater treatment facility operates at peak performance.

Hire Equipment

All ATAC Products are available for hire. Our hire services are designed to provide flexible and cost-effective solutions for temporary or less permanent installations. We offer a wide range of equipment including biological treatment systems, primary and final settlement systems, tertiary treatment systems, storage and pumping systems, and more.

All our hire equipment is fully compliant with industry standards and regulations, and is maintained to the highest quality standards. We provide comprehensive support throughout the hire period, including installation, commissioning, and ongoing maintenance.

Our hire equipment is available for short-term or long-term hire, and can be tailored to meet your specific needs. We offer competitive rates and flexible terms to suit your budget and operational requirements.

Tankering Services

ATAC Solutions provides professional tankering services. With competitive pricing and 24/7 emergency support, we deliver reliable and efficient tankering solutions for both residential and commercial clients.

Our Services Include:

- Regular maintenance schedules and emergency call-outs
- Professional cleaning and inspection services
- Modern vacuum tanker fleet with extended reach capabilities
- Transparent pricing with no hidden costs
- 24/7 emergency response

Professional Service You Can Trust

We maintain a diverse fleet of modern vacuum tankers equipped to handle any site requirements, from compact units for restricted access to large capacity vehicles for commercial projects. Our tankers feature extended suction capabilities up to 70 meters and high-pressure jetting up to 80 meters, ensuring efficient service regardless of location or terrain constraints.

atac

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